

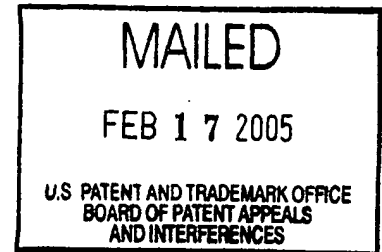
UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte TOSHIYUKI TOYOFUKU, MASAFUMI YAMASAKI,
NOBUHIDE DOTSUBO,
TOSHINOBU HARUKI, and HIDETO HAYASHI

Appeal No. 2003-2066
Application No. 09/096,395

ON BRIEF



Before HAIRSTON, RUGGIERO, and BARRY, *Administrative Patent Judges*.
BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 13-18, 20, and 22-28. The appellants appeal therefrom under 35 U.S.C. § 134(a). We affirm-in-part.

BACKGROUND

The invention at issue on appeal concerns a digital camera that has a "panoramic mode." In this mode, the camera captures a series of shots, stores the resulting images in a removable memory, and combines the resulting images into a single panoramic picture. (Appeal Br. at 2.)

In the panoramic mode, the number of images needed to compose the panoramic picture is either a predetermined number or a number set by a user. According to the appellants, heretofore, panoramic modes have provided no warning that a panoramic series of shots might not be completed because of insufficient memory to store the series. (*Id.* at 2.) Even if panoramic photographing was continued after switching to another memory, they add, data identifying panoramic images recorded on the initial and the subsequent memories were not uniform. (Spec. at 1.) Consequently, the settings of the camera before and after the memory switch could differ. (*Id.* at 1-2.)

In the panoramic mode of the appellants' camera, in contrast, the camera calculates how much space must be left in a memory to complete a panoramic photographing session. If the available memory is insufficient, the camera issues a warning. (Appeal Br. at 2.) Furthermore, when memories are switched during the panoramic photographing session, the camera maintains the same settings after the switch. (Spec. at 2.)

A further understanding of the invention can be achieved by reading the following claims.

18. An electronic photographing device, comprising:

- a digital camera having a panoramic mode in which a panoramic image can be recorded, wherein the panoramic image includes a number of associated panoramic image frames that together form the panoramic image, the digital camera being usable in combination with:

- a first detachable recording medium for recording image information corresponding to a first panoramic image frame of a set of panoramic image frames photographed in the panoramic mode, and

- a second detachable recording medium for recording image information corresponding to a subsequent panoramic image frame in the set of panoramic image frames photographed in the panoramic mode when a capacity of the first recording medium is insufficient to record all of the images of the set of panoramic image frames,

- the digital camera including:

- a photographing information storage element for storing information relating to photographing conditions of the first panoramic image frame of the set of panoramic image frames; and

- a control element for photographing the subsequent panoramic image frame according to the stored information relating to photographing conditions of the first photographed panoramic image; wherein the photographing conditions include at least one of exposure information, AF information and white balance information.

20. An electronic photographing device, comprising:

- a panoramic photographing apparatus which records panoramic images each composed of a plurality of associated panoramic image

frames and image information corresponding to at least a first panoramic image frame of a set of panoramic image frames photographed by panoramic photographing onto a recording medium, and which records image information corresponding to a subsequent panoramic image frame of the set onto the recording medium; wherein the panoramic photographing apparatus includes:

a photographing information storage element for storing photographing conditions of the first panoramic image frame of the set of panoramic image frames; and

a control element for photographing the subsequent panoramic image frame according to the stored photographing conditions of the first panoramic image frame;

wherein the photographing conditions include at least one of photometric information, white balance information, a focusing setting, exposure information, and a rotation direction.

27. An apparatus for recording panoramic images each panoramic image being composed of a plurality of associated panoramic image frames, comprising:

a first recording medium having recorded thereon image information corresponding to at least a first panoramic image frame of a panoramic image; and

a second recording medium having recorded thereon image information corresponding to a subsequent panoramic image frame of the panoramic image when a capacity of the first recording medium is insufficient to record all of the panoramic image frames in the panoramic image;

wherein the image information recorded on the first recording medium and the image information recorded on the second recording medium will include at least one piece of identification information representing the panoramic image.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,027,214 ("Fujimori") and U.S. Patent No. 5,907,353 ("Okauchi"). Claims 15-17 and 25-28 stand rejected under § 103(a) as obvious over Fujimori and U.S. Patent No. 5,682,197 ("Moghadam"). Claim 18 stands rejected under § 103(a) as obvious over Fujimori and U.S. Patent No. 6,195,125 ("Udagawa"). Claim 20 stands rejected under § 103(a) as obvious over Moghadam and Udagawa. Claim 22 stands rejected under § 103(a) as obvious over Moghadam, Udagawa, and Fujimori. Claims 13, 23, and 24 stand rejected under § 103(a) as obvious over Moghadam, Udagawa, Fujimori, and Okauchi.

OPINION

Our opinion addresses the claims in the following order:

- claims 13-17 and 22-24
- claims 18, 20, and 25-28.

A. CLAIMS 13-17 AND 22-24

Rather than reiterate the positions of the examiner or the appellants *in toto*, we focus on the point of contention therebetween. The examiner admits that "Fujimori does not disclose a panoramic camera. . . ." (Examiner's Answer at 5.) Finding that "Okauchi discloses the ability to determine or preset the number of images in a

panoramic image set," (*id.* at 18), he concludes, "[i]t would have been obvious to one of ordinary skill in the art to compare the number of remaining images in a recording medium as shown in Fujimori with the preset number of images in a panoramic image set so that a user is warned when there is not enough memory to complete a panoramic imaging operation," (*id.*), because "[a] user would not want a panoramic imaging operation to begin if there is not sufficient memory to store all of the images of the image set." (*Id.*) Further finding that "Moghadam disclose[s] taking a plurality of images, storing them on a memory card, and eventually combining them to form one complete panoramic image," (*id.* at 19), the examiner similarly concludes, "[i]f all of the images of a panoramic image set will not fit on a recording medium, it would have been obvious to generate a warning as in Fujimori, if the memory cannot hold the plurality of panoramic images being taken in Moghadam." (*Id.*) The appellants argue, "the combination[s] would still not lead one of ordinary skill in the art to a camera that issues a warning when there is insufficient memory to take a given number of images."

(Appeal Br. at 7.)

In addressing the point of contention, the Board conducts a two-step analysis. First, we construe claims at issue to determine their scope. Second, we determine whether the construed claims would have been obvious.

1. Claim Construction

"Analysis begins with a key legal question — *what is the invention claimed?*" *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987). In answering the question, "[t]he Patent and Trademark Office (PTO) must consider all claim limitations when determining patentability of an invention over the prior art." *In re Lowry*, 32 F.3d 1579, 1582, 32 USPQ2d 1021, 1034 (Fed. Cir. 1994) (citing *In re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 403-04 (Fed. Cir. 1983)).

Here, claim 14 recites in pertinent part the following limitations: a "warning means for generating a warning that a spare recording medium is required to complete recording the number of panoramic image frames, if as a result of comparison by the comparison means, the number of panoramic image frames which can be recorded as determined by the available recording medium determining means is smaller than the number of panoramic image frames preset by the predicted number setting means." Claim 15 similarly recites in pertinent part the following limitations: "a warning generator for generating a warning when the remaining number of panoramic image frames which can be recorded is not more than a predetermined value." Similarly, claim 22 recites in pertinent part the following limitations: "a warning generator for generating a warning when the remaining number of panoramic image frames which

can be recorded on the recording medium is less than a predetermined number."

Considering these limitations, claims 14, 15, and 22 require generating a warning when the remaining number of panoramic image frames that can be recorded is less than, or not more than, a predetermined value.

2. Obviousness Determination

Having determined what subject matter is being claimed, the next inquiry is whether the subject matter would have been obvious. "In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness." *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) (citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)). "A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)).

Here, Fujimori "relates to an electronic still camera for recording an electronically photographed still image in a predetermined recording medium such as a

memory card. . . ." Col. 1, ll. 8-12. The "electronic still camera includes means for obtaining maximum and minimum data amounts of image data recorded in the recording medium, obtaining a remaining data amount which can be recorded in the recording medium on the basis of the total data amount of the still images recorded in the recording medium, comparing the remaining data amount with the maximum, average, and minimum data amounts of the image data, and generating warnings of remaining amounts to a user stepwise in accordance with the comparison results." Col. 3, ll. 1-12. It is uncontested, however, that "Fujimori only teaches to issue such a warning when there is insufficient memory to take a single image." (Appeal Br. at 7.)

For its part, Okauchi "provide[s] an image pickup apparatus which can pick up a high-quality still image corresponding to information associated with an object such as the size . . . of the object. . . ." Col. 1, ll. 43-45. "In [a] divisional image pickup mode, when the object has a size as large as, e.g., a magazine (280 mm (length) × 220 mm (width)), and when the photographer performs framing, so that the object image is displayed on the entire screen of the display unit 3 and then depresses the release button 4, the system control circuit 30 detects based on the already calculated object distance and the synthesized focal length of the zoom lens 22 and the focus lens 23 that the size of the object is as large as a magazine . . . , and determines based on this

detection result that an image pickup operation is going to be performed by dividing an object image into four areas." Col. 6, ll. 6-17. An image corresponding to each of the areas is recorded. *Id.* at ll. 17-51. Subsequently, "the four-divided images are synthesized to a single original image on the basis of the additional information recorded together with the image data. . . ." *Id.* at ll. 58-61. The examiner does not allege that Okauchi detects, let alone generates a warning, when the remaining number of divided images that can be recorded is less than, or not more than, a predetermined value.

Because Fujimori generates a warning only when there is insufficient memory to take a single image, and Okauchi does not detect when the remaining number of divided images that can be recorded is less than, or not more than, a predetermined value, we are unpersuaded that the combination of the references would have suggested generating a warning when the remaining number of panoramic image frames that can be recorded is less than, or not more than, a predetermined value. Therefore, we reverse the obviousness rejection of claim 14.

For its part, Moghadam discloses "an electronic panoramic camera 10" col. 2, l. 58, that includes "a panoramic mode switch 20." *Id.* at ll. 61-62. "The mode switch

20 allows operation of the camera 10 in a normal mode for producing images of conventional format or in a panoramic mode for producing images tagged for panoramic processing. . . ." *Id.* at ll. 63-67. The examiner does not allege that Moghadam detects, let alone generates a warning, when the remaining number of panoramic images that can be recorded is less than, or not more than, a predetermined value.

Because Fujimori generates a warning only when there is insufficient memory to take a single image, and Moghadam does not detect when the remaining number of panoramic images that can be recorded is less than, or not more than, a predetermined value, we are unpersuaded that the combination of the references would have suggested generating a warning when the remaining number of panoramic image frames that can be recorded is less than, or not more than, a predetermined value. Therefore, we reverse the obviousness rejection of claim 15 and of claims 16 and 17, which depend therefrom.

The examiner does not allege, let alone show, that the addition of Udagawa cures the aforementioned deficiency of Fujimori, Okauchi, and Moghadam. Absent a teaching or suggestion of generating a warning when the remaining number of panoramic image frames that can be recorded is less than, or not more than, a

predetermined value, we are unpersuaded of a *prima facie* case of obviousness.

Therefore, we reverse the obviousness rejection of claim 22 and of claims 13, 23, and 24, which depend therefrom.

B. CLAIMS 18, 20, AND 25-28

"[T]o assure separate review by the Board of individual claims within each group of claims subject to a common ground of rejection, an appellant's brief to the Board must contain a clear statement for each rejection: (a) asserting that the patentability of claims within the group of claims subject to this rejection do not stand or fall together, and (b) identifying which individual claim or claims within the group are separately patentable and the reasons why the examiner's rejection should not be sustained." *In re McDaniel*, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002) (citing 37 C.F.R. §1.192(c)(7) (2001)). "If the brief fails to meet either requirement, the Board is free to select a single claim from each group of claims subject to a common ground of rejection as representative of all claims in that group and to decide the appeal of that rejection based solely on the selected representative claim." *Id.*, 63 USPQ2d at 1465.

Here, the appellants group claims 25-28 together. (Appeal Br. at 3.) We select claim 27 from the group as representative of the claims therein.

With this representation in mind, we focus on the point of contention between the examiner and the appellants. The examiner finds, "Moghadam . . . discloses a camera capable of operating in . . . a panoramic photographing mode. The camera includes the use of a memory card (70) for saving the image information. The camera system also includes saving photographing information along with the image and using the photographing image in subsequent images." (Examiner's Answer at 12.) Noting that "[t]he claims of group 2 (18 and 20) describe the teaching of the invention that a composite picture can be taken and stored on two separate memory cards with the camera being cognizant that only a portion of a panoramic scene has been completed and stored on one memory card, with the remaining portion being stored on a second memory card, with identifying information correlating the two memory card data to one another," (Appeal Br. at 8), the appellants allege, "[t]he prior art of record is devoid of any such teaching." (*Id.*) Admitting that "the group four claims (25-28) a[s] directed to an inventive concept that is somewhat similar to those of the claims in the second group," (*id.*), the appellants further allege, "that concept is nowhere disclosed in the prior art of record, as noted above." (*Id.*)

1. Claim Construction

"[T]he Board must give claims their broadest reasonable construction. . . ." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1668 (Fed. Cir. 2000). "Moreover, limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)).

Here, claim 18 recites in pertinent part the following limitations: "a photographing information storage element for storing information relating to photographing conditions of the first panoramic image frame of the set of panoramic image frames. . . ." Similarly, claim 20 recites in pertinent part the following limitations: "a photographing information storage element for storing photographing conditions of the first panoramic image frame of the set of panoramic image frames. . . ." "[S]omewhat similar[ly]," (Appeal Br. at 8), claim 27 recites in pertinent part the following limitations: "image information recorded on the first recording medium and the image information recorded on the second recording medium will include at least one piece of identification information representing the panoramic image."

Giving the limitations their broadest, reasonable construction, claims 18 and 20 require storing a representation of photographing conditions of the first panoramic image frame of a set of panoramic image frames and claim 27 requires storing a representation of a panoramic image on a first recording medium and on a second recording medium.

2. Obviousness Determination

The question of obviousness is "based on underlying factual determinations including . . . what th[e] prior art teaches explicitly and inherently. . . ." *In re Zurko*, 258 F.3d 1379, 1383, 59 USPQ2d 1693, 1696 (Fed. Cir. 2001) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966); *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ 1614, 1616 (Fed. Cir. 1999); *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995)).

Here, "[t]he view finder 16 [of Moghadam's camera] includes a panoramic alignment means shown as two spaced indicia 22, 24." Col. 2, ll. 62-63. "In operation, as shown in FIG. 2, the photographer notes the alignment of the first indicia 22 with a first feature in the scene and takes the first exposure (as indicated by exposure position A). The photographer then displaces the field of view of the camera 10

sufficiently to align the alternate indicia, that is, the second indicia 24, with the first feature (as shown by exposure position B), and takes the second exposure. This process can then be repeated as desired to produce a panoramic image of any width." Col. 3, ll. 1-9.

"As shown in the camera block diagram of FIG. 4, the analog output of the image sensor 14 is converted into a digital image signal by an analog/digital (A/D) converter 30 and thereafter applied to a control processor 32." *Id.* at ll. 21-24. "The digital image from the control processor 32 is then applied to the output section 34, which may include a storage device such as a resident (buffer) memory, a removable memory device (such as an integrated circuit memory card), a magnetic medium, or the like." *Id.* at ll. 28-32.

More specifically, "[t]he control processor 32 generates the digital image signal in a digital format such as shown in FIG. 5, that is, including a header 52 and an image trailer 54. According to the invention, a sequence of such image trailers, and their corresponding headers, may be used to form a sequence of panoramic image segments." *Id.* at ll. 51-56. Because "[t]he function of the header 52 is to tag image segments for downstream panoramic processing, and to provide other data useful in

the subsequent concatenation of the panoramic image segments," *id.* at ll. 57-59, and the reference stores the header in a resident or removable memory, we find that Moghadam stores a representation of photographing conditions of the first panoramic image frame of a set of panoramic image frames and stores a representation of a panoramic image on a first recording medium. Because Moghadam features removable memory devices, we further find that when one removable memory device was switched for another removable memory device, the reference would have stored a representation of a panoramic image on the second recording medium. Therefore, we affirm the obviousness rejection of claim 18; of claim 20; of claim 27; and of claims 25, 26, and 28, which fall with claim 27.

CONCLUSION


In summary, the rejections of claims 13-17 and 22-24 under § 103(a) are reversed. The rejections of claims 18, 20, and 25-28 under § 103(a), however, are affirmed.

"Any arguments or authorities not included in the brief will be refused consideration by the Board of Patent Appeals and Interferences. . . ." 37 C.F.R. § 1.192(a). Accordingly, our affirmance is based only on the arguments made in the

briefs. Any arguments or authorities omitted therefrom are neither before us nor at issue but are considered waived. *Cf. In re Watts*, 354 F.3d 1362, 1367, 69 USPQ2d 1453, 1457 (Fed. Cir. 2004) ("[I]t is important that the applicant challenging a decision not be permitted to raise arguments on appeal that were not presented to the Board.") No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).


KENNETH W. HAIRSTON
Administrative Patent Judge

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